Collectanea.

BUILDING MATERIALS.

The mode of construction of our ancient houses, and much of their architectural character, was determined by the nature of the materials afforded in the neighbourhood of the site. The influence of these local circumstances is seldom sufficiently appreciated. The architecture of the ancients seems to have originated in Egypt, Chaldea, and other eastern countries, where timber is rare, but which abound in strata of soft freestone, easily excavated, and of granite, which, though difficult to cut, is raised with facility in large and solid blocks. The first habitations, as well as the first places of worship in these countries, were doubtless caves cut out of the soft rock; for we find innumerable examples of such cave dwellings, temples, and tombs, throughout Persia, Asia Minor, Syria, Egypt, &c., bearing the marks of high antiquity. The entrance is often ornamented with pilasters on either side, and an architrave above, rudely carved in the surface of the rock. In these grottos we think we see the rudiments of the Egyptian, and, ultimately, even of the Grecian temple. When, afterwards, the building was raised in the open air, the dark and narrow cella still retained much of the character of the cave. Immense blocks of transported stone, generally granite, were raised on each other to form the walls, and still larger slabs, laid horizontally across the roof. Hence the flat entablature characteristic of the ancient architecture. But among the vast forests of the alluvial regions of the north, where stone was rare and timber most plentiful, the log hut or the osier cot was the earliest and rudest kind of habitation. For the larger sort of buildings, a frame of massive timbers, resembling the inverted hull of a ship, formed the skeleton of the ancient hall or place of worship; the principal beams springing from the ground, and naturally curved, united in a pointed or Gothic arch overhead. The intervals were filled up with wattled osiers plastered with clay or lime.

Again, in the southern climates, where ancient architecture arose and perfected itself, little shelter was needed from the elements. Life was passed almost wholly in the open air. The cell, which formed the sanctuary of the deity, and represented the original cave, was never entered by his worshippers, and the open portico or peristyle was invented to protect them from the scorching sun. But the tribes of the bleak north must at an early period have found the advantage of a building closed against the external air for the purposes of worship; and in rearing these edifices of the only materials they could command, it was natural that they should endeavour to imitate the high over-arching groves within whose sacred recesses they had been accustomed to hold their religious meetings. And long after these wooden churches gave way to more costly structures in stone, we cannot but fancy that the original idea of the forest-sanctuary was constantly present to the mind of the architect, as he reared the tall and taper shafts on either side the nave,—spread them upwards into branching ribs which over-arched the lofty vault,—confined his sculptured ornaments almost exclusively to imitative foliage, and admitted, through the traceried net-work of the high and narrow windows, just that dim light which penetrates the gloom of the deep forest, and produces a reverential awe predisposing the mind to religious adoration. The intention and spirit of Gothic architecture is certainly to be looked for in the effect produced by the interior of the building. In the Grecian temple, on the contrary, the interior is nothing, the exterior every thing. And this consideration will explain much of the contrast which these modes exhibit: as physiologists have illustrated the structure of the human frame by likening it to a vegetable turned inside out—so we shall perhaps better understand the characteristic differences of the two principal modes of architecture, by considering the Gothic church as a Grecian temple with the outside turned inwards. The beauty and symmetry of the Grecian exterior is the essence and object of its construction. The Gothic exterior is wholly subsidiary to the interior. Its ornamental parts, including the towers, battlements, and pinnacles, are inventions intended to relieve as much as possible the ungainly and heavy aspect of the exterior of a huge barn-like building, and to conceal or make the best of the buttress work required for the support of its lofty and spreading roof.

The same local circumstances of climate and accessible materials occasioned a like contrast between the domestic buildings of the northern and southern nations of Europe. The flat terraced roofs of the latter were evidently intended to give the inhabitants the enjoyment of the cool morning and evening air from the tops of the houses—the steep ridges and pointed roofs of the former to throw off the weight of snow which in high latitudes would often break in a flat roof. There was also another cause for this difference. The shores of Asia Minor, Greece, and Italy produce a volcanic sand (pozzolana), which, mixed with lime, forms a cement of as firm a texture as stone itself. A flat roof covered by this cheap and simple mixture is, in the climate of the south, as perfectly impenetrable to moisture, and as durable, as if sheeted with lead. But in the north, neither is there any such solid cement to be procured, nor perhaps, if procurable, would it stand the frequent alternations of frost and moisture common in those climates; and the northern architects having only slate, shingle, or tile for the coverings of their roofs, were thus driven into the adoption of the ridge and gable, as the only form in which these materials can be employed. The Gothic label and drip mouldings form another characteristic feature of this style, required by the northern atmosphere as a protection for the stone-work from the injurious attacks of moisture and frost. The stories, projecting one beyond the other, as commonly met with in the early northern houses, were doubtless intended to shelter the foundations from the wet; and as this was only required, so it could only be completely executed in timber-houses—though we find the same feature imitated, after habit had brought it to be esteemed ornamental, in the corbelled oriels of stone habitations.

THE GLASS MANUFACTURE.

The very great improvements in this manufacture, together with constant announcements of new decorative varieties, and the lively interest we take in their application to domestic architecture, induces us to give a digest of its early history and progressive introduction to general use in this country.

This beautiful art was certainly known in extremely remote times, and the current fable from *Pliny*, ascribing the invention to Phœnician sailors, who, coasting in a barque laden with fossil alkali, formed a temporary cooking-place on the bank of the river *Belus*, by building a stand for their kettles with that material, which fusing with the sand of the shore, produced glass, needs correction. That it originated in Egypt, the cradle of the arts, there can be no doubt; beautiful imitations in glass of precious stones have been found adorning mummies which had reposed in their cases for three thousand years; and this proves, moreover, that the colouring of the fluid metal was practised at a period coeval with the invention itself, though requiring much chemical knowledge and expert handling: the circular rings and amulets of coloured glass which have been found amongst British druidical remains, may also be ascribed to Eastern manufacture, procured during casual visits of the vessels of other countries to these coasts; these trinkets, which no doubt bore a high, if not mystical, value, are usually green and blue, but others have been found waved with streaks of blue, red, and white. These mummy ornaments and amulets are, then, the most ancient examples of glass-making, and of a date preceding the foundations of Rome. All the most ancient writers agree in mention of the existence of specimens in glass of great beauty and value, the produce of the East. The Roman emperor Nero, is stated by *Pliny* to have paid 6,000 sestertii for two glass cups, which sum has been erroneously rendered as equal to 50,000*l.* of our money; the mistake has arisen from taking sestertii for *sestertia*, which reduces the price to the more probable sum of 50*l.* Later in the annals of the empire we are informed that upon the visit of the Emperor Hadrian to Egypt, which took place A.D. 126, he was presented by a priest of Alexandria with two glass cups that had been used in the service of the temple, and which sparkled with colours of every hue; and that these specimens were so highly prized as to have been afterwards produced but on festivals and high solemnities. With respect to the Roman period, of which alone we have any thing approaching to accurate historical data, it would seem that the ancients were content with an application of the art to the requirements of the wealthy, for it does not appear to have extended beyond the tables and sideboards of the luxurious chiefs and patricians of the empire, and to mementos of the obsequies of persons of rank, a practice which had descended through the stream of time from Egypt to Greece and Rome, and of which the emblem is still retained in our own funeral vase. A great variety of the funeral pottery and glass ware of the ancients is preserved, and is almost invariably turned up in examinations of sepulchres and tumuli. The most splendid example of this kind, and which proves the great degree of perfection the art had attained, is the Barberini or Portland Vase, in the British Museum. It is composed of deep blue glass, with figures of a delicate white opaque substance in relief, and was found in the tomb of Alexander Severus, who died A.D. 236. The curious in inquiries of this nature, and who desire more detailed information than our space permits, will do well to consult the works of *Caylus* and *Winkelmann*, who are sufficiently diffuse in citing instances of ancient skill; amongst others, the formation of pictures by means of glass tubes of various colours, which being accurately fitted to us to produce the design, were afterwards fused into a solid mass.

CHINESE METHOD OF MANUFACTURING TEA EXTREMELY THIN SHEET LEAD WITH WHICH THE CHESTS CONTAINING TEAS ARE LINED.

From the appearance of the lamina in which teas are packed by this ingenious people, many have supposed that they are produced by the process of rolling; such, however, is not the case; they are actually cast in the state we see them, by the following primitive method, which may afford hints for operating upon other metals fusible at low temperatures. Two men are employed in the process; one of them is seated upon the floor, with a large flat stone before him, and a moveable flat stone at his side. The other stands beside him with a crucible containing the melted lead, from which he pours upon the large flat stone, or slab, a sufficient quantity for each separate operation; the seated workman then lifts the moveable flat stone, and placing it suddenly upon the fluid metal, presses it out into a thin flat plate, which he instantly removes; and thus the process goes on with the rapidity incident to practice. The rough edges of the plates are then cut off, and they are soldered together to any required extent. Zinc has been thus treated to obtain very thin plates for galvanic purposes.

THE GREAT RAILWAY STATION, MANCHESTER.—This splendid and extraordinary work, which will unite the Liverpool and Manchester and Manchester and Leeds lines at Hunt's-bank, is progressing rapidly. The station, including the sliding lines, turn-tables, arrival and departure platforms, &c., will be the most extensive in the kingdom, surpassing the justly celebrated one at Liverpool. It will include a space of 852 feet in length, by an average breadth of 130 feet having five main lines of rail; 700 feet of this length will be covered with an iron roof in three compartments, of 59 feet 6 inches, 28 feet, and 26 feet 3 inches span respectively, supported by elegant iron columns. The station-house, containing the waiting and refreshment-rooms, booking-offices, &c., all erected in the most convenient and extensive manner, is a handsome building in the Roman Doric style, 256 feet long and 36 feet wide, raised one story from the ground, and surmounted by a parapet; the refreshment-saloon is lighted by elegant circular-headed windows with stone pilasters and dressings, and surmounted by an elegant cornice, in the centre of which is to be placed a handsome clock. The entrances to the booking-offices are under a covered way, supported by brackets nine feet six inches long, which, though perhaps not equal in architectural beauty to pillars surpass them in convenience, as it leaves a clear space for coaches and foot-passengers, and will be unencumbered for general convenience.